

**REMARKS**

Claims 1-32 are pending in the application. All claims have been rejected. These rejections are respectfully traversed and reconsideration is requested.

**Oath/Declaration**

The Examiner has indicated that the declaration is defective because the signature of inventor Ronald Cleveland is missing. However, if one inventor is unavailable or refuses to sign, rules permit that “the application may be made by the other inventor on behalf of himself or herself and the nonsigning inventor” by filing a petition under 37 C.F.R. Paragraph 1.47(a). 35 U.S.C. 118, MPEP 409.3(a).

As required by the rules, the Applicants have filed a Petition Under 37 C.F.R. Paragraph 1.47(a) with the supporting documents on March 31, 2004. This petition has been granted on May 19, 2004. A copy of the Decision Granting Petition Under 37 C.F.R. 1.47(a) is enclosed with this Amendment. The Applicants respectfully request the Examiner to acknowledge validity of that Decision and the fact that no further Declaration is needed.

**Claim Rejections Under 35 U.S.C. 103**

Claims 1-4, 8-22 and 28-32 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ragland (US 6,437,702). This rejection is respectfully traversed and reconsideration is requested.

The present application is directed toward an ultrasonic sensor unit for cargo detection anywhere within a standard fifty-three foot trailer. The cargo detector includes at least one ultrasonic transducer with multiple operation modes, including short range, long range, and proximity range modes. The long range operation mode scans the area adjacent an end of the cargo trailer that is distal to the end where the sensor is mounted. The area scanned by the long range mode may extend from ten to sixty-three feet and may cover the loading door wall of the cargo trailer.

Ragland also teaches an apparatus for determining whether cargo is present in a freight car. Ragland describes the freight car as having a proximal (“rear”) end with a loading door and opposing, distal (“front”) end. The apparatus of Ragland consists of one or more transmitters and

receivers that are mounted inside the freight car at the “distal” end, towards the car’s ceiling (Abstract, ll. 1-6). The transmission patterns of the transceiver are designed to cover the targeted areas inside the trailer. The targeted areas include the areas near the distal (front) end of the car and do not cover the back of the car or the loading wall, or the low-lying areas (Col. 4, ll. 51-61).

The Examiner states that Ragland teaches the sensor having multiple operation modes with different ranges, with at least one operation mode scanning an area of the cargo trailer adjacent a distal end of the trailer from the first wall on which a sensor is mounted. The Applicants respectfully disagree. The Examiner points to Figures 1, 2 and 7 of Ragland describing the signal pattern of transmitting sensors 204 and 206. However, Figure 2 specifically illustrates those transmitters covering only the area close to the front of the trailer. Such transmitters are known in the art and are illustrated as prior art in the present application (see Figure 1). A sensor with an operation mode that is capable of scanning an area of the cargo trailer adjacent a distal end of the trailer from the wall on which a sensor is mounted, as claimed at least in independent Claims 1 and 28, is patently different from the sensor covering only the front area of the trailer. What Ragland refers to as the “distal” end of the freight car is merely the front end and not the end opposite to the one on which the sensor is mounted, as is defined and claimed in the present application.

The disadvantage of front-mounted units of the prior art lies in that only a small portion of the cargo space is being examined. Depending upon a weight distribution, a small load may be positioned anywhere in the trailer space, and thus may not be detectable using a front-mounted sensor, as in Ragland. In fact, Ragland specifically teaches away from scanning the area of the cargo trailer adjacent a back end of the trailer by stating that the transmission patterns need to be carefully tailored to not cover the back wall or the low-lying areas, which may include small objects. Therefore, Claims 1 and 28 are not rendered obvious by Ragland and the rejection should be withdrawn. Dependent Claims 2-4, 8-22 and 29-32 depend on independent Claims 1 and 28, respectively, and are not obvious in view of Ragland for at least the same reasons as above.

Claims 5-7 and 23-27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ragland in view of Stringer (US 6,298,009). This rejection is respectfully traversed and reconsideration is requested.

Stringer is directed to an apparatus for weighing and non-contact measuring of dimensions of a stationary object where the plate upon which the object is placed for weighing and measuring is isolated from the support assembly (Abstract, ll. 1-4). Stringer deals with an atmospheric effect on ultrasonic waves by using a wave travel time for a known distance to compensate for the effects (Col. 9, ll. 1-6).

There would be no motivation to combine the teachings of Ragland and Stringer at the time of the invention because Stringer specifically addresses a stationary measuring device, where the precision is gained from known distances and knowledge that the object is present and is located in a particular spot. Ragland, on the other hand, addresses detecting the presence of the object in the trailer; Ragland is not interested in detecting the size of the object or its dimensions. Stringer, on the other hand, relies on the knowledge that the object is present in a particular spot, and no other objects are located in the same container. Because Ragland specifically does not even cover the whole trailer space, there would be no motivation to combine the crude detection system of Ragland with the precise measurement system of Stringer.

Furthermore, even if the teachings of Ragland and Stringer were to be combined, *arguendo*, the resulting system would not render Claims 5 and 23 obvious because neither Ragland nor Stringer teach a long range sensor that is connected to an atmospheric absorption compensation module, as is recited in Claims 5 and 23. Therefore, the rejection should be withdrawn. Dependent Claims 6, 7 and 24-27 depend on Claims 5 and 23 and are not obvious in view of the combination of Ragland and Stringer for at least the same reasons as above. All claims are now believed to be in condition for allowance.

**CONCLUSION**

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Lubashev  
Lyudmila Lubashev  
Registration No. 55,408  
Telephone: (978) 341-0036  
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 5/10/2005